

SAN DIEGO ASSOCIATION OF GEOLOGISTS

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SDAG MEETING ANNOUNCEMENT

Wednesday, September 19, 2007

HYDROCHEMICAL IMPLICATIONS OF GRAVEL MINING ON A COASTAL AQUIFER IN A SEMI-ARID ENVIRONMENT OF NORTHERN MEXICO

presented by

Thomas Kretzschmar, CICESE

Where: University of San Diego

When: 5:30 pm – Social Hour
6:15 pm – Dinner
7:15 pm – Program

Directions: Strata Plaza behind the Shiley Center for Science and Technology, 5998 Alcala Park, San Diego, CA 92110-2492
<http://maps.google.com/maps/ms?ie=UTF8&hl=en&t=h&om=0&msa=0&msid=113980409927148878258.0004380f39414e349e1a7&ll=32.769973,-117.194359&spn=0.004583,0.009785&z=16>

Please allow 10 to 15 minutes to walk or take a shuttle from the west parking lot, which is just north of Linda Vista Road, down the hill from the venue.

At 6:45 we'll walk next door to the Peace and Justice Building for dinner at 7:00pm, where the program will commence shortly after dinner buffet is served.

Dinner: Choose one of the following: Chicken Cacciatore/Spinach Lasagna/ Red Snapper Piccata
Accompanied by: Classic Caesar Salad, Zucchini Parmesan, Chef's Pasta (not included with Spinach Lasagna), Garlic Bread and Breadsticks, Assorted Cookies

Cost: \$30 per person, \$5 discount for SDAG members and their guests, \$20 for students. Add \$5 if you did not make a reservation.

Reservations: Make your reservation online at www.sandiegogeologists.org **no later than noon, Monday, September 17th.**

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THOMAS KRETZSCHMAR, CICESE

Thomas Kretzschmar is a hydrogeochemist in the Department of Geology of the Center of Scientific Research and of higher education of Ensenada (CICESE), in which he entered September of 2002. Previously it was an employee in the Autonomous University of Cd Juárez and the water utilities (JMAS), where he used his know-how to study the hydrochemical development and the chemical distribution of water supply. In his time in the JMAS he developed a hydrochemical model for the Boson del Hueco aquifer. Additionally he got familiarized with the environmental needs of the region of Cd Juárez. In Baja California this finishing at the moment a CONACYT research project in the Rio Guadalupe watershed with the objectives of a sustainable use of the water resource. Up to now himself two masters students graduated so far with thesis related to the hydrologic studies of the Valley of Guadalupe. A PhD student is finishing at the moment his studies related to the hydraulic development of aquifer of the same valley. Several other active projects cover different environmental issues in northern Mexico. One is related to the seepage form the all American canal in Mexicali and another studies the impact of surface water runoff on groundwater in Cd. Juarez.

Hydrochemical implications of gravel mining on a coastal aquifer in a semi-arid environment of Northern Mexico

The La Mision coastal aquifer represents the outlet of the Guadalupe River Basin in Baja California, Mexico, to the Pacific Ocean. This aquifer has been a water supply for the state for over 40 years. Water overexploitation may cause an advance of salt-water intrusion, and the excessive mining of alluvial sands has exposed the aquifer to evaporation. The aquifer was monitored bimonthly from October 2003 to July 2004 and showed a general brackish quality with TDS>1000 mg/L, but in lagoons nearest to the coast presented saline water composition (TDS>10000 mg/L). Wells farthest to the ocean showed potable water quality with TDS<1000 mg/L. Water sampled from private wells have a Cl/mixed-cation composition, whereas water from lagoons and government wells shows a Cl/Na composition. Anionic and cationic data from water samples imply a hydrogeochemical deterioration with time, caused by evaporation from exposed parts of the aquifer and seawater intrusion resulting from water pumping at nearby wells.

2007 SDAG MEETING SCHEDULE - Mark your Calendars!

Meetings are usually on the 3rd Wednesday of the month but may change to accommodate speaker and meeting place schedules. Check here for updates!

October 13-14	SDAG Annual Field Trip - Baja, Valle De Guadalupe
October 17	Joint ASCE/SDAG meeting at The Butcher Shop, Kearny Mesa
November 14	Geology of Earth (note earlier week)

President's Corner

I enjoyed Neil Gordon's talk last month on what we can expect from clouds as the atmosphere warms. Unlike the rocks we are accustomed to, clouds are certainly "here today, gone today"!

It was a pleasure to honor our science fair winners. It is heartening to meet such bright young people interested in geology and so full of curiosity and interesting ideas.

Join us for SDAG's sixth one-stop wonder (OSW) of 2007. We'll see a strand of the Rose Canyon fault where it cuts upper Cretaceous marine siltstone and sandstone in a seacliff in La Jolla.

Dr. Thomas Kretzschmar, this year's field trip co-leader will be the presenter at our meeting this month. Get a head start on the field trip. Please get your deposit in early for the field trip. At a maximum of 40, it will fill up fast.

Please let me know if you can't make the meeting, even if it's past the deadline. Last month we had 7 folks signed up who failed to show up. Two people told me ahead of time and I was able to make an adjustment with the caterer. However, we are committed to paying the caterer for the other five. I would prefer to give our money for scholarships rather than the caterer. So please let me know if your plans change.

Dave Bloom

ANNOUNCEMENTS

ONE STOP WONDERS!

SDAG One Stop Wonder Field Trip Saturday September 22nd 10am - Noon .

Stop #1: Meet at 10 am at "The Cave Store" located at 1325 Cave Street at La Jolla Cove (858-459-0746). Bring some money to enter the Cave; \$4 Adults, \$3 Children 16 and under. The store is just north of Prospect near the cliff edge on the east side of La Jolla Cove. The Cave Store is a historic attraction that is over 100 years old. The store has a tunnel to a sea cave below which opens to La Jolla Cove. This ocean cave was the largest cave and was made accessible by land through a man made tunnel under the direction of retiree and artist Gustauf Schultz. The cave was later named "the Sunny Jim Cave " after a cereal mascot whose profile matched that of the cave opening. It is curious to know that the cave received its name "Sunny Jim" by Frank Baum, the author of The Wizard of Oz. He called it that because the shape of the cave's opening resembled a cartoon mascot for British Force Wheat Cereal in the 1920's. Gustauf Shultz, a German born painter, photographer, geologist, and mining engineer excavated the tunnel in order to share the rare sea cave formation with the rest of the world and to support his retirement. The cave was formed through the ages by the continued beat of waves into the La Jolla cliffs. Two years of work by laborers hired by Gustav Shultz in 1902 and 1903, using pick and shovel, gave this cave to the American public. Several years after it's completion 145 steps were built into the lighted tunnel. Steps descend from the Cave Store to the main chamber of Sunny Jim sea cave.

2. Stop #2: We will walk/hike along the upper coast trail to the Country Club Fault exposure of the Rose Canyon Fault Zone. We might be able to climb down the fault if the cliff ropes are still holding, or bring your own rope! Exposed in the sea cliffs is the Country Club fault shear zone within the Cretaceous Point Loma Formation. This is the western mapped fault in the Rose Canyon fault zone. A thick fault gouge can be seen in this near vertical exposure. The Country Club fault which extends across the south flank of Mt. Soledad from La Jolla Bay to the mouth of Rose Canyon was described by Kennedy and others (1975) and Kies (1979) as a reverse fault, down to the west, displacing sediments as young as Lindavista Formation but not displacing Bay Point Formation.

From Rob Hawk, City of San Diego:

A mammoth tusk was found at a project site in CCDC located at the corner of 16th & Market. The tusk is "Mammuthus- Columbi". It is estimated to be ~120,000- 500,000 years old (Ice Age). **It is the first mammoth tusk to be un-earthed in Downtown San Diego.** Of course, find this also suggests that an extensive environmental review may be required for below ground projects in the area for resources. More to come...

The **2007 Annual Meeting of the Association of Environmental and Engineering Geologists (AEG)** will be held in the Los Angeles area at the Sheraton Universal Hotel (near Universal Studios). This will be the 50th Anniversary of the founding of the AEG and the meeting theme will revolve around that idea as well as celebrating California Geology. The technical program will focus on a variety of tunnel, fault hazard evaluations, marine geology, and coastal processes, as well as classic engineering geology, environmental geology, and groundwater topics. The 2007 Annual Meeting Planning Committee is currently scheduling several technical sessions, special symposia, short courses, and a teachers' workshop. These will provide opportunities for geologists and other professionals to share in the state-of-the-art and practices. In addition several field trips are planned to be held in conjunction with the meeting. Please place 2007 AEG convention on your calendars September 24 through 28, 2007.

Info from Rob Hawk regarding grading on sensitive lands: <http://www.sandiego.gov/development-services/industry/pdf/infobulletin/ib560.pdf>

Rocks with Provenance Needed for a Reference Collection for Typing and Sourcing San Diego Co. Artifacts

The San Diego Archaeological Center and local archaeologists need a county-wide reference collection of local rocks from outcrops. The collection will be an important resource for archaeologists involved in typing and sourcing stone artifacts from the San Diego area.

Archaeologists call rocks "lithics or stones." They care about the breaking characteristics of the rocks (Do they flake well? How do they flake?). And they care about the provenance (How far did people walk carrying that rock? Did people trade for it? Or did it have some special property such that people were willing to travel long distances to collect it themselves?) Archaeologists have typically divided local rocks into the following categories: quartz, quartzite, obsidian, cryptocrystalline silica (chert, flint, jasper), volcanic or metavolcanic, granitic, gabbro, schist, sandstone, limestone, and Bedford Canyon metasediment. Spatial references used by archaeologists include USGS topographic maps and UTM grids.

Norrie Robbins, adjunct faculty in the Dept. of Geological Sciences at SDSU, is spearheading this volunteer effort. She notes that geologists use a much wider variety of descriptors for rocks than do archaeologists. One of the objectives of this project is to cross-reference archaeological categories with geological ones to help develop a mutually understandable terminology and to improve sourcing. Rock specimens in the reference collection will be identified by spatial coordinates and both geological and archaeological descriptors

Field scientists working in San Diego County with a GPS unit and a hammer are being encouraged to collect hard rock specimens from outcrops throughout the county for the collection. Collectors please take the usual precautions and wear protective goggles. Also be aware that geological sampling is not allowed in state parks without a proper permit and that artifacts and prehistorically broken rock faces at archaeological quarries should not be disturbed. Specimens should fit into a quart-sized plastic bag and include some small chips to show fracture tendency. Latitude and longitude must be recorded for each specimen. An ideal specimen will include both a weathered and a fresh surface. Other useful information to provide, if known: physical characteristics (lithology, mineralogy); location (topographic map, UTM grid, street/road name, city, region); your name. Rocks from surrounding counties (Orange, Riverside, Imperial) are welcome additions to the collection.

Please contact Norrie (nrobbins@geology.sdsu.edu, 619-303-9095) with any questions and to arrange pick up of specimens. Specimens may also be placed in her mailbox at SDSU or dropped off at the Center (please indicate Attention: Rebecca Nathan). In addition, Dr. Robbins or Dr. Tim Gross will be available at most meetings of the San Diego County Archaeological Society (SDCAS) and San Diego Association of Geologists (SDAG) to accept specimens. Building the reference collection is a long-term project. There is no time limit for making your contributions.

2007 CORPORATE SPONSORS - THANK YOU!!

Corporate sponsors provide a significant portion of SDAG's operating and scholarship budget. In addition to monthly recognition for your contribution, you are entitled to a free Internet "link" from [SDAG's Website](#). We also list Corporate Sponsors in our annual SDAG Field Trip Volume.

Please consider SDAG sponsorship in 2007!

A special thank you to **Ninyo & Moore** for sponsoring the preparation, duplication, and mailing of the newsletter for 2006 and 2007!

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JOB OPENINGS!

The Santa Barbara County Planning and Development Department is currently seeking a full-time engineering geologist to supervise and perform engineering geology work and to review plans for conformance with county ordinances dealing with soil and earth stability. Registration as a professional engineering geologist in the State of California and a valid California Class C driver's license are required.

The salary range is \$71,847-\$87,709 approximately per year. The County also offers a generous benefits package that includes a \$5466/year benefit allowance. With a mild climate and spectacular setting that includes scenic coastline, beautiful valleys, and rugged mountain peaks, Santa Barbara County is one of the most desirable places in the world to live and work. To learn more about the position and to apply on line, visit www.sbcountyjobs.com, or call (805) 568-2800. This position is open until filled

URS Corporation, a nationwide, multidisciplinary consulting firm and the largest design firm in the country, has a strong project backlog in San Diego County in the transportation and water resources markets. We are seeking qualified candidates for the following positions for our San Diego office:

Engineering Geologist (Requisition #URS16201): Geologist/Engineering Geologist with 0 to 5 years of experience in consulting engineering firm; preferably with master's degree. Responsible for supervising field explorations, geologic mapping, and report preparation. Should be experienced in logging borings in soil and rock, knowledge of Caltrans investigation procedures a plus.

URS is an Equal Opportunity Employer and strongly supports diversity in our work force (M/F/V/D). We offer competitive salaries and a comprehensive benefits package.

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CDM is currently looking to hire a fulltime Geologist for our Irvine, CA office.

As a member of this team, you would contribute to CDM's mission by:

- Planning and conducting work requiring judgment in the independent evaluation, selection, and substantial adaptation and modification of standard techniques, procedures, and criteria
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- Coordinating various technical aspects of work
- Receiving technical guidance on unusual or complex problems and supervisory approval on proposed plans for projects Acting as a mentor for lower level employees
- Possibly supervising the work of a few geologists/engineers who are assisting on assigned work
- Establishing and monitoring budgets to assess profitability.
- Managing tasks or projects as appropriate to meet the technical and budget objectives of the project.
- Field work such as mapping, well installation oversight and sampling.
- Development of technical reports documenting work.
- Participating to a limited degree in new business development

Requirements

- 5 - 7 minimum years of experience since B.S.
- Registration as a licensed Professional Geologist
- Broad knowledge of precedents, principles and practices as a Geologist.
- Good writing and oral skills.

CDM has consistently earned industry recognition for our innovative project solutions. Recognition by respected professional organizations, such as the American Academy of Environmental Engineers, the American Council of Engineering Companies, and the Design-Build Institute of America, is a testament to CDM's delivery of exceptional service and the right total solutions for each client's needs. We are an equal opportunity employer.

Qualified candidates should send resumes to mcshefferylj@cdm.com. Please make reference to job ID# 7044BR when applying.

TN & Associates, Inc. specializes in environmental services, natural resources, infrastructure engineering, and construction services. Our San Diego office is currently looking to fill the following positions:

Staff Geologist: Geologist to perform office and field assignments for environmental site assessment and remediation projects. Position will involve soil borings, monitoring well installations, soil and water sampling, historical research investigations, data management, construction documentation and construction QA/QC, and report writing. Ability to adapt to both office and field environments a must. OSHA 40-hour training a plus. Periodic travel is required.

Project Geologist: Geologist with 3 to 7 years experience required in conducting all aspects of field investigations including limited site assessments, multi-task remedial investigations and remedial actions with a strong emphasis in technical writing skills. The ideal candidate will have experience in data analysis and reporting. PG registration and OSHA 40-hour training a plus. Work will entail some fieldwork and travel, mainly within California. Experience with government projects (DOD, USACE, AFCEE, Navy and USEPA) landfills and stormwater engineering/compliance a plus.

We offer a competitive salary, benefits package and friendly working environment. Equal Opportunity Employer. Please mail or fax your resume and letter of interest to: T N & Associates, Inc., 2247 San Diego Avenue, Suite 238, San Diego CA 92110, fax 619-291-8100.

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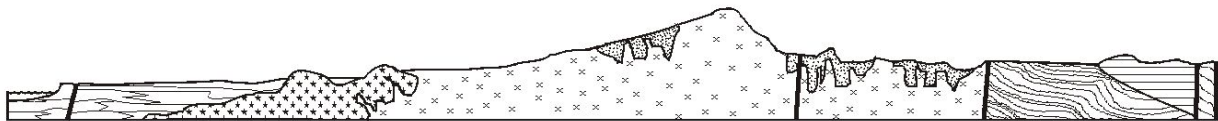
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Position responsibilities include project management, collecting field data, analysis, report writing, and client communication. Oversight of construction inspections will also be required. Qualified candidates must be a licensed P.E. or G.E., have a minimum of 8 years experience and good communication skills. Testifying experience as a geotechnical forensic expert is a plus.

Staff Geologist/Engineer

We are looking for an honest, hard working, technically minded graduate to perform subsurface investigations, collect field data, perform geotechnical analysis, and write reports. Construction inspections will also be required. Qualified candidates should possess good communication skills. Some experience in geotechnical investigations is preferred but recent graduates will be considered.

The right, qualified, independent and hard-working individual will be offered an excellent salary (commensurate with their experience), profit sharing/401K plan; company sponsored insurance program, and bonuses. If you are interested, please submit a resume and cover letter to: TerraPacific Consultants, Inc., 12245 World Trade Drive, Suite G, San Diego, CA 92128; or by fax to 858-521-1199; or by e-mail to jimg@terrapac.net.



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